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LEIBNIZ AND DESCARTES.

THE influence of Descartes appears in almost every detail of the philosophy of Leibniz. Scholasticism and historical studies were subordinated as Leibniz grew older, and even in the conception of activity in which he opposes Descartes, the argument is largely Cartesian. But we shall leave the implications of the two metaphysical systems to be dealt with in the discussion of Leibniz's theory of monads. Here we shall attempt to estimate only (1) the dependence of Leibniz upon Descartes for his conceptions of method, (2) his relation to Descartes in psychological questions, and (3) his dependence upon the Cartesian mechanism in physical science. In general Leibniz held that Cartesianism was "the anteroom of philosophy"; and although he criticizes Descartes more frequently than any other philosopher, the very frequency with which the name appears in Leibniz's works is a sign of the immense importance to him of the Cartesian philosophy. As to method, we may distinguish the general question of mathematical reasoning from the particular suggestion of Descartes as to philosophical doubt. This latter was made very prominent in the popular renderings of Descartes's philosophy; and it is the conception of methodic doubt which still rouses the anger of the survivors of Descartes's oldest opponents, the scholastics. For there are still in many parts of Europe schools of thought which are pre-Cartesian, and doubt to them has an ugly sound. Descartes's doubt indeed proceeds from a knowledge of the fact that "there is no opinion however absurd or incredible which has not been maintained by some one of the philosophers."[1] A sort of relativism is generally supposed to be the result, as it is the result among many still when they first discover that their own beliefs and customs are not universal. To Descartes, however, the discovery seemed to show that every proposition must be doubted until some point was reached at which doubt was no longer possible. In the view of Leibniz this method was good, but the emphasis was in the wrong place. He says in a letter of 1696 to Bernoulli that "if Descartes, when he said that everything should be doubted, meant only what I propose, he was right; but in fact he erred in two ways, by doubting too much and by ceasing to doubt too readily." Leibniz wanted the emphasis to be laid on the desire for proof; that is to say, he corrected the method by making it a demand for reasons. And we can see how it would modify the effect of methodic doubt if it meant, not the rejection of any proposition which was not obvious, for obviousness itself may be difficult to distinguish, but the refusal to accept any statement without evidence. Again as regards ceasing to doubt, Leibniz pointed out the weakness in Descartes's conception of "clear ideas." This seemed to give no intrinsic criticism of what must be accepted and what not. He, therefore, suggested that the criterion was that the "idea" should, when analyzed, be seen to be not contradictory. Thus, as Leibniz says, the "idea" of a thousand sided figure is not, in the ordinary sense, a "clear one"; but it implies no contradiction in itself. The fundamental likeness between Leibniz and Descartes is in the conception that we can go back into experience until we come to unassailable or self-evident truths; and the manner in which these truths are conceived is alike in both, although Leibniz makes more clearly than Descartes the distinction between *vérités éternelles* (*a priori*) and *vérités de fait* (*a posteriori*).

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[1] *Discours de la méthode*, Part II.

In connection with this method and with the mechanism of Descartes, we can observe Leibniz's dependence in his estimate of mathematical symbolism. His scheme for a universal philosophical language appears to have been made out before he saw Descartes's letter on the subject. But there is no doubt of the source of the high value given by Leibniz to mathematics as a guide to philosophical method. It is in part the common thought of the age which had achieved so much by the application of exact mathematical reasoning to the data of physical science. The nature of things seemed to be disclosed when the master-key of calculation was used. "I believed," says Descartes, "that I could borrow all that was best both in geometrical analysis and in algebra and correct all the defects of one by the help of the other." Leibniz carries this conception further by arguing that we could make for philosophy a real symbolism (*caractéristique*), like the numbers in arithmetic or the signs in algebra. "If we had a symbolism," he says, "we should be able to reason in metaphysics and morals in much the same way as in geometry and analysis." And as mathematics has developed because of the signs we have invented, so philosophy would grow by the adoption of symbolic logic. What we need, he says, is not a vague statement concerning the limitations of reasoning, but an exact method. All reasoning is calculation, but, as against Descartes, it is not therefore mathematical. As far as men do think effectively in philosophy their thinking is "mechanical"; it is the primitive nature of the mechanism which is the source of the trouble. How happy would philosophers be if they adopted the universal symbolism; for then "when a dispute arose, it would suffice to take their pencils in their hands, to sit down to their slates and to say to each other, with a friend as witness if they liked: Let us calculate."[2] This situation Leibniz imagined himself to have all but reached. "In the general characteristic or universal calculus," he says, "I have definitions, axioms and very remarkable theorems and problems in regard to coincidence, identity, similitude, relation, power or cause, and substance, and everywhere I advance with symbols in as precise and strict a manner as in algebra."[3] This is in the mood of the Cartesians who hoped to explain everything *more geometrico.*

In the second place, Leibniz's psychology is closely related to that of Descartes. We may omit the discussion of the epistemological criticism of Descartes's *Cogito, ergo sum.* It belongs to the general body of Leibniz's positive philosophy, and is important as connecting Descartes with Leibniz only in so far as Leibniz says that one's own existence is *not* a premise for necessary truths and is not any more certain than the existence of one's thoughts.[4] In psychological description Leibniz emphasizes the fact of unconscious perception, accepting more or less exactly the Cartesian idea of perception. Thus "perception" should be distinguished from apperception or consciousness. "In this matter the Cartesians have fallen into a serious error, in that they treat as non-existent those perceptions of which we are not conscious." Unconscious mental states are therefore added to the list of psychological facts; and their existence is used to show the nature of some monads. But in the main the Cartesian, as opposed to the scholastic, psychologically is accepted.

Thirdly, as to the use of mechanical conceptions for physical science, this was of course not peculiar to Descartes and Leibniz. It was the common ground of all who made progress in the understanding of nature in the seventeenth century. Against the vagueness of the metaphysical physics inherited from the Middle Ages, it was effective not only upon grounds of general reasoning but also in the results it had to show. Leibniz, more even than Descartes, valued such results and in that he followed the ideals of Bacon but, naturally, with more intelligence. He felt that the bearing of scientific investigation upon the ordinary task of human life was not unimportant. The debt Leibniz owed to Descartes is acknowledged to have been great even before Leibniz came to Paris; but in Paris he seems to have taken up the new scientific and mathematical method with renewed energy. In the letters to Malebranche[5] he puts his position most clearly, and in one of 1679, which was apparently never sent, he writes: "It seems that all the harvest of Descartes's philosophy is over, or that the hope that was in it has perished in the bud with the death of its author; for the majority of Cartesians are only commentators." In the same letter he says of Descartes, "there are perhaps few who perceive as clearly as I the greatness of his mind," but "his geometry is what I think least valuable in Descartes." And in the letters to Arnauld he is continually correcting or criticizing the geometry of Descartes. The hope that there might be great practical results had been frustrated, and even the theoretical development seemed lacking. But there is no hesitation in Leibniz as to the value of the geometrical conceptions of science. It is true that these seemed to imply a complete removal of the "spiritual" and the "supernatural" from the regions dealt with in science, and old final causes would also disappear. Even this, however, although it was a reason for Leibniz's ultimate repudiation of Cartesian metaphysics, could not shake his belief in Cartesian physics.

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[2] G., Vol. VII, p. 200, quoted in Russell.

[3] Letter to Arnauld, Jan. 14, 1688. Cf. Montgomery, p. 241.

[4] Russell, § 102.

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[5] G., Vol. I, pp. 334f.

In the purely metaphysical issue Leibniz seems to grant to Descartes the arrangement of the machine of the universe by God; but he makes a small change, for "it is more reasonable and more worthy of God to suppose that he has created the machinery of the world in such a fashion from the very start that without doing violence at every moment to the two great laws of nature, that of force and that of direction, but rather by following them exactly (except in the case of miracles), it so comes about that the internal springs of bodies are ready to act of themselves, as they should, at the very moment when the soul has a conforming desire or thought."[6] The whole conception here is Cartesian—the machine and the springs of bodies and the desiring soul. The suggestion that what is "worthy of God" is true may perhaps be regarded as Leibnizian; but even that is in some part shared by Descartes, in succession to the established tradition according to which Aquinas long before could prove that Paradise was in the east, because the east is more "noble." At this point, however, Leibniz parts from Descartes and endeavors, still with an eye to Cartesian influences, to render experience not as mechanism with a parallel mentalism, but as activity and pre-established harmony. He was, in his own conception, restoring teleology to metaphysics and spirit to nature. But the result must be dealt with in the discussion of Leibniz's system as a whole. He follows Descartes at least so far as to begin with his description of facts.

The debt of Leibniz to Descartes is perhaps not less great in that metaphysical issue upon which they differ fundamentally—the conception of substance. It seems to be possible that the true source of concepts each had is not yet fully investigated by historians; but as the problem is now generally stated, Descartes stands for (*a*) extension as the nature of one kind of substance; and also, by implication, for (*b*) the real unity of all separate "things" in one (as in Spinoza's theory) or in two forms. Against this Leibniz stands for (*a*) activity or *actus,* in the scholastic sense, as the ultimate nature of all existents, and (*b*) individual units called monads, which are not in any sense less real than the whole within which they are related. The opposition does not involve a complete reversal of views, although Leibniz writes, "Extension is nothing but a certain indefinite repetition of things in so far as they are similar to each other and indiscernible. It presupposes things which are repeated." In such words he seems to imply that he had "reduced" extension to monads. Probably the source of both Descartes's and Leibniz's reasoning on matter is to be found in the theories of late scholasticism, sometimes called nominalism.

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[6] Letter to Arnauld, April 30, 1687.

At this point we may perhaps note the relation of Leibniz to scholasticism, for it is not very different from that of Descartes, who had made less extensive study of its literature but was not for that reason any less affected by its leading conceptions. It is usual to consider scholasticism chiefly as a system of logic. The Aristotelian syllogism and the philosophical method, in part misleading, with which the name of Aristotle was connected, did undoubtedly color the whole of the medieval tradition in philosophy and science. This had been brought to an almost absurd elaboration by Lullus: and all this Leibniz acknowledges to have greatly impressed him. But this is not the most valuable part of scholasticism, nor is it the point in which scholasticism has most importance in the history of philosophy. For, first, we must recognize that scholasticism did not mean in the seventeenth century the theory of Aquinas and Scotus only, or chiefly, but the theory of Ockham. There had been a revival of Thomism, but in the main the philosophical tradition was such as Ockham had left it, and in the *matter* as opposed to the *method* the new thought of the Renaissance depended upon what the histories of philosophy usually call nominalism or conceptualism.

The idea of *extension* as the nature of "substance" is to be found in Ockham. Thus "quantity" (used as meaning extension) is not distinct from "substance."[7] The point cannot be argued here; but in Ockham's eagerness to be rid of "quantity" as a real thing, he seems to have persuaded himself that the reality which most people call substance was quantity or extension. The influence on Descartes may have been very indirect or even unconscious. On the other hand Leibniz is generally recognized to have owed the conception of *actus* or activity to the scholastics. In his letters to the Jesuit Des Bosses this is abundantly clear. It is not, however, sufficiently noticed that this activity is conceived as individualized also because of the late scholastic tradition, for which again the name of Ockham may be taken to stand. The word "monad" may have been due to Giordano Bruno; but the phrase should not be forgotten by which Ockham revolutionized scholastic metaphysics: "Everything outside the mind is in itself individual in such a way that *itself* without any addition (e. g., the principle of individuation, etc.) is a 'this.' "[8] Leibniz's monadism is at least in part affected by this suggestion; but he does indeed often go back to the Thomistic influence when he "explains" individuation of the finite monad by some process of connection with "matter" or *potentia.* He might have maintained with the late scholasticism that the individual (*illud quod*) is the only substance and needs no further "explanation." But whatever the source of his thought, Leibniz clearly allowed for ultimately real individuals and he granted the calculability of phenomena in terms which imply all that Descartes intended to indicate by "extension." The rest of his doctrine was not Cartesian;

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[7] *De sacramento altaris,* q. 3.

[8] *In sententias,* q. VI.

but his continual attacks upon the idea that extension is the ultimate nature of matter should not blind us to the amount of general agreement between Descartes and himself, at least as opposed to the official and established conceptions of the day.

The relation between the two may perhaps be put in this way: For Descartes the calculability of phenomena is fundamental and there is nothing more to be said about it. The *nexus* between things is mechanical, in the sense that origination or spontaneity within the system may be left out of account in our description of the material universe. And this position has become so familiar to us that it is hardly valued by philosophers except for exercising their wits in discovering in what sense it may be mistaken. This position was known to Leibniz as the new doctrine which had overcome the "spiritualism" of the medieval metaphysics of nature. And undoubtedly he saw its complete validity for the description of phenomena, or the explanation of them in so far as that can be had by showing how they are connected. He disputed the details of the Cartesian geometry, but he granted the calculability of phenomena.

Descartes had, however, left upon his hands, so to speak, the kind of substance which was called soul or mind, thus creating a problem as to the connection of soul and body solved in one way by the occasionalists and in another by Spinoza. Leibniz attempts to avoid the difficulty by beginning with one type of ultimate reality, active substance. The meaning of this can only be rendered in a full account of Leibniz's philosophy. But even in Leibniz's monadism appear the automata and machines of Descartes. Thus he says,[9] "Every organic body of a living being is a kind of divine machine or natural automaton;" and again,[10] "Descartes saw that souls cannot impart force to bodies because there is always the same quantity of force in matter. Yet he thought that the soul could change the direction of bodies. This was, however, because at that time the law of nature which affirms also the conservation of the same total direction in the motion of matter, was not known. If he had known that law he would have come upon my system of preestablished harmony. According to this system bodies act as if (to suppose the impossible) there were not souls at all and souls act as if there were no bodies, and yet both body and soul act as if the one were influencing the other." There is much force in your "as if"! But in any case Leibniz grants that one may neglect soul in describing bodily changes, the correctness or incorrectness of which it is not our present purpose to discover. The important fact for us here is that it was only by retaining the Carestian doctrine as to natural phenomena being in some sense (whether fundamentally or superficially) calculable, that Leibniz was able to contribute to the progress of our knowledge of the universe. It is beside the point, in this regard, to ask what metaphysical truth is implied in the processes of physical science. That problem may be solved or left unsolved while the undeniable fact must be recognized that the Cartesian hypothesis has led to a control of natural forces and a power of prediction which can hardly be refused the name of knowledge.

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[9] *Monadology*, 69.

[10] Ibid., 80.

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